

# ABSTRACT

A single pulse laser beam of linear polarization is irradiated to a glass region such that the condensing point is located inside of the glass region, thereby to form, at the  
5 condensing point, a periodic structure region in which high refractive-index zones and low refractive-index zones are repeatedly being generated at pitches of  $1\text{ }\mu\text{m}$  or less. Planes in which the high refractive-index zones or the low refractive-index zones are being joined to one another, are  
10 formed in parallel to the polarized magnetic field direction of the pulse laser. It is therefore possible to prepare an optical structural body having a submicron-order fine periodic structure which can readily be produced.